Department of Agriculture

Forest Service

**Intermountain Region**

**Ogden, Utah**

# Forest Insect and Disease Conditions

## Intermountain Region 1981



## COVER STORY

Internal decay of subalpine fir on the Dixie National Forest is caused by the fungus, *Fomes annosus*. Infected trees are stressed and often attacked by bark beetles.

# FOREST INSECT AND DISEASE CONDITIONS

## Intermountain Region

## 1981

Forest Pest Management
State and Private Forestry
USDA Forest Service
324 25th Street
Ogden, Utah 84401

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## RESUMÉ OF CONDITIONS

Mountain pine beetle continued to be the most significant insect pest in the Intermountain Region. In 1981, 1.14 million trees were killed by the beetle. Although beetle activity decreased in southern Idaho, populations in Utah and Wyoming intensified into major outbreaks. Tree mortality in Utah increased five-fold over 1980.

Four hundred overmature Engelmann spruce on 1,500 acres were killed by the spruce beetle east of Heber, Utah. Beetle populations will continue to increase in 1982.

Western spruce budworm remained static in southern Idaho and Wyoming. Budworm damage increased in Utah with defoliation reported for the first time in Logan Canyon. The budworm defoliated 1.4 million acres in 1981.

Larch casebearer defoliation was widespread throughout the entire larch type on the Boise and Payette National Forests, Idaho. Visible defoliation by Douglas-fir tussock moth was observed in the Owyhee Mountains. The pine butterfly caused light to moderate defoliation over a small area on the Boise National Forest.

Significant increases in subalpine fir mortality, previously attributed entirely to western balsam bark beetle, occurred in 1981 especially in Utah. The cause of the fir mortality which affected over 100,000 acres in Utah, appeared to be a complex of two root rots, western balsam bark beetle and two other bark beetles.

Dwarf mistletoes continued to have significant impacts on growth and yield of the host species throughout the Region. Detection of existing root disease problems in spruce-fir, Douglas-fir, and pine stands is increasing.

Atropellis canker was identified in several new areas. A *Dasyscypha* species was associated with cankers on lodgepole pine seedlings. Needle diseases were readily apparent on all conifer species. Red band needle disease was identified for the first time in southern Idaho on ponderosa pine. *Populus* species were severely defoliated by foliage pathogens.

## ENTOMOLOGY

### Mountain pine beetle, *Dendroctonus ponderosae* Hopkins

For the first time in several years, the massive mountain pine beetle outbreak on the Targhee National Forest, Idaho, declined dramatically. In 1981 an estimated 714,000 lodgepole pine were killed which was a significant reduction from four million trees in 1980. Infestations on the Ashton and Island Park Ranger Districts continued to subside, while buildups on the Teton Basin Ranger District stabilized. The most noticeable areas of tree mortality were evidenced on the south slopes of the Centennial Mountains, Dubois Ranger District.

Downward trends in mountain pine beetle activity continued on the Boise National Forest where lodgepole pine mortality declined from 27,000 trees in 1980 to approximately 10,000 trees in 1981. Most of the mortality occurred in old infestation areas near Deadwood Reservoir and along the upper reaches of the North Fork of the Boise River.

Chronic infestations of mountain pine beetle in lodgepole pine continued downward trends on the northern division of the Sawtooth National Forest, Idaho, from Galena Summit southward to and west of Ketchum, Idaho. On the southern division of the Forest, activity was negligible on the Twin Falls and Burley Ranger Districts. Declining trends were evidenced by estimated numbers of trees killed, approximately 19,000 in 1980 as opposed to 3,000 in 1981.

Declining mountain pine beetle activity occurred on the Payette National Forest. Heavy lodgepole pine mortality continued in the Paddy Flat and Kennally Creek areas southeast of

McCall, Idaho. For two decades, persistent mountain pine beetle infestations have occurred in lodgepole pine stands on State and private lands from McCall to Cascade, Idaho. Currently, mortality is downward with 7,000 trees lost in 1981 as compared to 14,000 killed in 1980. Elsewhere infestations were static to slightly decreasing. Forestwide, approximately 30,000 trees were killed as opposed to 37,000 trees in 1980.

Mountain pine beetle activity increased in Wyoming on the Gros Ventre, Hoback, and Greys River Ranger Districts on the Bridger-Teton National Forest. On the Gros Ventre Ranger District, 8,000 trees were killed from Lower Slide Lake to Bacon Ridge.

Infestations in lodgepole pine increased significantly throughout northern Utah and southwestern Wyoming. The most severe outbreak affected the entire lodgepole pine type surrounding Flaming Gorge Reservoir where 350,000 trees were killed in 1981, a five-fold increase from 1980. Other infestations occurred on the Mountain View, Evanston, and Logan Ranger Districts, Wasatch-Cache National Forest.

Infestations in ponderosa pine on the Dixie National Forest, Utah, appeared to be declining, although significant mortality continued in 1981. Ponderosa pine mortality increased on the Moab and Monticello Districts of the Manti-LaSal National Forest and on the Beaver Ranger District, Fishlake National Forest in Utah.

## **Jeffrey pine beetle,** *Dendroctonus jeffreyi* **Hopkins**

Increasing Jeffrey pine mortality occurred in Dog Valley and in the East Fork of the Canon River between Grovers Hot Springs and Markleeville, California. Jeffrey pine beetle and red turpentine beetle were both active in overstocked stands.

**Douglas-fir beetle,** *Dendroctonus pseudotsugae* **Hopkins**

Large-scale infestations of Douglas-fir beetle that were experienced in the late 1960's and early to mid-1970's continued to decline. Heaviest damage was recorded on the Boise National Forest along the Middle Fork of the Boise River where approximately 800 trees were killed. On the Weiser Ranger District, Payette National Forest, persistent tree killing occurred in Adams and Stacy Creeks.

**Spruce beetle,** *Dendroctonus rufipennis* **(Kirby)**

Engelmann spruce mortality was observed on 1,500 acres on the Heber Ranger District, Uinta National Forest, Utah. Approximately 400 trees were killed by the spruce beetle in Mill Hollow, Campbell Hollow, Little South Fork, Wolf Creek, Clyde Creek, and Mud Creek. The last outbreak in this area occurred in 1958. Beetle populations will increase in 1982 causing additional tree losses.

**Western balsam bark beetle,** *Dryocoetes confusus* **Swaine**

Western balsam bark beetle was associated with extensive subalpine fir mortality throughout the Region. The majority of the mortality occurred in Utah where most of the fir type sustained heavy tree losses. Two root rots, *Fomes annosus* and *Armillaria mellea*, and two other bark beetles, *Pityophthorus pseudotsugae* and *Pityokteines minutus*, were also associated with the fir mortality.

**Pine engraver beetle,** *Ips pini* **(Say)**

Pine engraver beetle activity was at a low level throughout the Region. In the Crown Point area northeast of Cascade, Idaho, and Clear Creek east of Boise, Idaho, groups of 20-40 ponderosa pine were killed.

## Western spruce budworm, *Choristoneura occidentalis* Freeman

In 1981, western spruce budworm defoliated 1.4 million acres of Douglas-fir, grand fir, and subalpine fir throughout the Region (Tables 1 & 2). Budworm populations remained static in Idaho and Wyoming while significant increases occurred in Utah.

Table 1. **Acres of visible western spruce budworm defoliation in the Intermountain Region during 1981 as determined by aerial surveys.**

| National Forest, Park, and Intermingled State and Private Lands | DEFOLIATION INTENSITY (ACRES) | | | |
|---|---|---|---|---|
| | Light | Moderate | Heavy | Total |
| Boise N.F. | 165,100 | 104,100 | 34,100 | 303,300 |
| Bridger-Teton N.F. | 29,900 | 40,100 | 49,700 | 119,700 |
| Caribou N.F. | 34,900 | 73,700 | 35,500 | 144,100 |
| Challis N.F. | 21,000 | -- | -- | 21,000 |
| Dixie N.F. | 2,500 | 10,100 | 2,000 | 14,600 |
| Fishlake N.F. | -- | -- | 18,000 | 18,000 |
| Payette N.F. | 164,800 | 71,600 | 64,100 | 300,500 |
| Salmon N.F. | 212,900 | 28,000 | 500 | 241,400 |
| Sawtooth N.F. | 8,300 | -- | -- | 8,300 |
| Targhee N.F. | 125,700 | 61,000 | 22,900 | 209,600 |
| Wasatch-Cache N.F. | 16,100 | 1,400 | -- | 17,500 |
| Grand Teton N.P. | 3,800 | 8,900 | 1,700 | 14,400 |
| **TOTAL** | **785,000** | **398,900** | **228,500** | **1,412,400** |

Table 2. **Status of western spruce budworm infestations by State—1981.**

IDAHO

| Land Ownership Class | Outbreak Area | | | |
|---|---|---|---|---|
| | Light | Moderate | Heavy | Total |
| | (Thousand Acres) | | | |
| National Forest | 656.5 | 289.0 | 134.3 | 1,079.8 |
| Other Federal | 3.8 | 8.9 | 1.7 | 14.4 |
| State & Private | 72.4 | 40.5 | 21.1 | 134.0 |
| **TOTAL** | **732.7** | **338.4** | **157.1** | **1,228.2** |

UTAH

| Land Ownership Class | Outbreak Area | | | |
|---|---|---|---|---|
| | Light | Moderate | Heavy | Total |
| | (Thousand Acres) | | | |
| National Forest | 18.4 | 11.5 | 20.0 | 49.9 |
| Other Federal | -- | -- | -- | -- |
| State & Private | .2 | 0.0 | 0.0 | .2 |
| **TOTAL** | **18.6** | **11.5** | **20.0** | **50.1** |

WYOMING

| Land Ownership Class | Outbreak Area | | | |
|---|---|---|---|---|
| | Light | Moderate | Heavy | Total |
| | (Thousand Acres) | | | |
| National Forest | 29.2 | 40.1 | 49.7 | 119.0 |
| Other Federal | 3.8 | 8.9 | 1.7 | 14.4 |
| State & Private | .7 | 0.0 | 0.0 | .7 |
| **TOTAL** | **33.7** | **49.0** | **51.4** | **134.1** |

Defoliation was recorded for the first time on 17,500 acres in Logan Canyon, Utah. Expanding infestations were observed in Red Deer Creek on the Dixie National Forest and above Little Reservoir on the Fishlake National Forest. All of the infestations in Utah are predicted to expand in 1982.

Chronic infestations in western Wyoming which have persisted for the last 20 years, declined in 1981. However, heavy defoliation occurred over a large area extending south from Jackson to Marten Creek in the Greys River drainage and from the Hoback Divide west to the Snake River Range. The current infestation encompasses an area of 120,000 acres.

Although total acreage of western spruce budworm defoliation in southern Idaho remained about the same as in 1980, defoliation severity and acreage increased in some areas and decreased in others. Increases occurred on the Boise, Caribou, Challis, Payette, and Sawtooth National Forests, while decreases occurred on the Salmon and Targhee National Forests.

The Boise National Forest sustained the greatest increase in budworm activity. The infestation around Deadwood Reservoir persisted, but areas northeast of Lowman, Idaho, along the South Fork of the Payette River, expanded and intensified. The area around Warm Lake also exhibited increased budworm activity.

New infestations were detected on the Sawtooth and Challis National Forests. On the Challis National Forest, defoliation occurred northwest of Challis, Idaho, and in Loon Creek, Warm Spring Creek, and around Little Soldier Mountain in the River of No Return Wilderness. Budworm activity on the Sawtooth National Forest was concentrated in Little Smokey Creek from Couch Summit to Fleck Summit.

The Targhee and Caribou National Forests shared an infestation which ranged from Driggs, Idaho, to the south throughout

the Caribou Range. Overall defoliation in this area was more extensive and intensive than last year.

**Larch casebearer,** *Coleophora laricella* **(Hübner)**

Defoliation of western larch greatly expanded and now affects the entire larch type on the Boise and Payette National Forests. Like last year, defoliation was attributed to a complex of larch casebearer and a needle pathogen, *Meria laricis.* Larch casebearer appeared to be very active early in the year but was largely replaced by needle pathogens during the summer.

Preliminary results of a survey of casebearer parasites indicate that introduced *Chrysocharis laricinellae (Ratz.) and Agathis pumila* (Ratz.) are being incorporated into the casebearer population. Time is necessary for these biological control agents to reach significant population levels.

**Pine butterfly,** *Neophasia menapia* **(Felder and Felder)**

In late summer numerous white butterflies were observed in many ponderosa pine stands on the Boise and Payette National Forests. Although these flights indicate a widespread infestation, moderate defoliation was found only in a limited area around Dry Buck Summit on the Boise National Forest. Viable egg masses were recovered from ponderosa pine stands on the Boise National Forest around Lowman, Idaho City, Banks, and east of Cascade, Idaho.

**Ponderosa pine needle miner,** *Coleotechnites* **sp.**

Approximately 1,900 acres of ponderosa pine on the Salmon National Forest, were defoliated by this moth. Activity was centered in the Wagonhammer and Silverlead Creek drainages and in two areas around Gibbonsville.

**Douglas-fir tussock moth,** *Orgyia pseudotsugata* **McDunnough**

Approximately 160 acres of light to moderately defoliated Douglas-fir were observed in the East Fork of Flint Creek and Jordan Creek areas in the Owyhee Mountains. A single ornamental spruce in Hailey, Idaho, was the only other defoliation reported. This ornamental defoliation may indicate a future problem in the surrounding forested area.

Although 1980 pheromone traps indicated a significant population expansion in the Dewey Peak area, spring larval populations were low and visible defoliation did not occur.

The pheromone trap detection survey was expanded this year. Traps were placed in the Dewey Peak, Mill Creek, and Boone Peak areas in the Owyhee Mountains; Little Water Gulch, Virginia Gulch, and Couch Summit vicinity on the Sawtooth National Forest; Skunk Creek on the Boise National Forest; Anderson Creek Divide on North Fork of Lake Fork Creek on the Payette National Forest; and in the Bell Mountain area east of Bellevue, Idaho. Trap analyses are presently imcomplete.

**Forest tent caterpillar,** *Malacosóma disstria* **(Hübner)**

This insect caused light to moderate defoliation on approximately 35 acres of scattered aspen in heavily used recreational areas west of Cascade Reservoir in Idaho. As expected, the trees refoliated after insect feeding ended in mid-July.

**Sugar pine tortrix,** *Choristoneura lambertiana* **(Busck)**

This insect fed upon the new foliage of scattered sapling and pole-size lodgepole and ponderosa pine. Defoliation was noted on the Payette, Salmon, and Sawtooth National Forests.

## PATHOLOGY

### **Dwarf mistletoes,** *Arceuthobium* **spp.**

Dwarf mistletoes continued to be the most significant diseases of conifers in the Region. Growth reduction, location, and incidence information has not changed significantly since the 1979 report.

Dwarf mistletoe related projects in the Region in 1981 included: 65,262 acres of presuppression surveys, 2,929 acres of suppression projects and 230 acres of post-suppression surveys.

### **Atropellis canker,** *Atropellis piniphila* **(Weir) Lohman and Cash**

Atropellis cankers identified by the black staining of the wood underneath the flattened cankers were found on lodgepole pine in several new locations in Idaho—Goat Creek area near Krassel, Tripod Creek area west of Smith's Ferry, and Thorn Creek area near McCall.

### **Dasyscypha canker,** *Dasyscypha* **sp.**

Stems of young (4-6 year old) lodgepole pine in several plantations on the Ashton Ranger District in southeastern Idaho were girdled by cankers resulting in top-kill. The cup fungus, *Dasyscypha* sp., was frequently associated with active canker margins.

### **Comandra rust,** *Cronartium comandrae* **Peck**

Comandra rust cankers causing top-kill of lodgepole pine were found on the Ashley, Bridger-Teton, and Targhee National

Forests. Infections were found in mature stands and did not appear to be of recent origin.

**Cytospora canker,** *Cytospora chrysosperma* **Pers. ex Fr.**

Cytospora cankers were identified on ornamental aspen in the Wood River Zone of the Sawtooth National Recreation Area, Idaho, and on hybrid poplar at Monroe Hot Springs, Utah.

**Annosus root rot,** *Fomes annosus* **(Fr.) Cke.**

*Fomes annosus* has been identified with increasing frequency on ponderosa pine, Douglas-fir, and true fir in southwestern Idaho Forests.

A ground survey of a 1,000-acre spruce-fir stand on the Dixie National Forest revealed that 23% of the subalpine fir and 7% of the Engelmann spruce basal area were infected or killed by either *Fomes annosus* or *Armillaria mellea.* Many of the subalpine fir were also infested with *Dryocoetes confusus* Swaine. *Fomes annosus* was isolated from dying subalpine fir on the Wasatch, Fishlake, and Dixie National Forests. This fungus was also killing white fir on the Toiyabe and Humboldt National Forests, Nevada.

**Shoestring root rot,** *Armillaria mellea* **(Vahl. ex Fr.)**

*Armillaria mellea* was found in lodgepole pine regeneration on the Bridger-Teton National Forest and ponderosa pine seedlings and mature trees on the Manti-LaSal National Forest.

**Marssonina leaf spot,** *Marssonina populi* **(Lib.) Magn.**

Brown to black leaf spotting of *Populus* spp. foliage was

observed during spring and summer throughout the Region. Infection levels varied from area to area and by clone. Although several fungi including *Venturia* sp. and *Ciborinia* sp. may be involved, the organism most frequently associated with the discoloration was *Marssonina populi.*

**Leaf spot,** *Septoria aceris* **(Lib) Berk. and Br.**

Mountain maple in the Trail Creek area near New Meadows, Idaho, was heavily infected with *Septoria aceris.*

**Elytroderma needle disease,** *Elytroderma deformans* **(Weir) Darker**

Ponderosa pine and occasionally lodgepole pine with severe "Ely" infections exhibit a light-orange cast throughout the crown during the early spring and mid-summer. Moderate-to-heavy infection levels were observed in west-central Idaho.

**Red band needle blight,** *Scirrhia pini* **Funk and Parker**

Red banding of straw-colored 1- to 3-year-old pine needles in the spring characterizes *Scirrhia pini* infections. Infections were identified in the Garden Valley area east of Banks, Idaho. This is the first report of the organism in the Intermountain Region.

**Greybeard,** *Lophodermium* **spp.**

Red discoloration of 2- to 3-year-old needles on ponderosa pine was locally heavy in and around the Boise and Payette National Forests. Red discolored needles should gradually change to a grey in 1982. Several unidentified species of *Lophodermium* were associated with the disease syndrome.

## Miscellaneous foliar diseases

Lodgepole pine needle disease, *Lophodermella concolor* (Dearn.) Darker, was identified in several drainages around Tamarack, Idaho. Older lodgepole pine needles were occasionally found colonized by pine needle rust, *Coleosporium asterum* (Diet.) Syd., in the Smith's Ferry area. Douglas-fir throughout the Boise and Payette National Forests were colonized by the Christmas tree blight organism, *Rhabdocline pseudotsugae* Syd. Snow blight caused by *Phacidium infestans* Karst. was infrequently observed on Douglas-fir on the Ashton Ranger District in southeastern Idaho. Needle cast, *Lirula abietis-concoloris* (Mayr) Darker, and needle rust, *Pucciniastrum* sp. were locally heavy on true firs throughout the Region.

## Late Frost

Freezing temperatures during the early morning of July 8, 1981, (Table 3), affected the young succulent tissues of several conifer species throughout south-central Idaho. Newly emerged leaders were drooped and misshapened. Some mortality of branch tips was common in localized areas and closely resembled the symptoms associated with western spruce budworm damage.

Table 3. **Temperatures associated with late frost damage in south-central Idaho, July 1981.**[1]

| | July 8, 1981 Minimum | July 1981 Average Minimum |
|---|---|---|
| Grangeville | 36 | 49.2 |
| New Meadows R.S. | 30 | 38.2 |
| McCall | 28 | 41.5 |
| Council | 36 | 53.4 |
| Cascade | 27 | 40.0 |
| Boise | 36 | 52.3 |
| Idaho City | 28 | 42.1 |
| Lowman | 28 | 38.7 |
| Stanley | 21 | 32.5 |
| Ketchum R.S. | 28 | 41.0 |
| Salmon | 34 | 49.8 |
| Challis | 33 | 50.5 |
| Ashton | 32 | 47.3 |
| St. Anthony | 31 | 43.1 |
| Idaho Falls | 34 | 50.8 |
| Swan Valley | 26 | 42.2 |

[1] Climatological Data Idaho, July 1981, Volume 84, Number 7, National Oceanic and Atmospheric Administration

## Mountain Pine Beetle Loss Assessment Survey Intermountain Region--1981

A westwide inventory of mortality caused by the mountain pine beetle in lodgepole and ponderosa pine forests was completed by Forest Pest Management in 1981. The survey in the Intermountain Region included the lodgepole pine forests in Idaho, Utah, and Wyoming, and the ponderosa pine forests in Utah. The purpose of the survey was to estimate current levels of tree mortality and volume loss by land ownership. The survey was designed to provide statistical data with levels of precision needed for planning at the Regional and National levels.

The survey was a multistage probability proportional to size (PPS) design and involved aerial sketch mapping, large-scale color aerial photography and ground sampling. The survey provided data on the location of infested areas by major land ownership classes and estimates of numbers of trees killed and cubic foot volume loss for Idaho, Utah, and Wyoming (Tables 4 and 5). A final report will be issued in early summer 1982.

Table 4. **Mountain pine beetle loss assessment survey--1981.**

**LODGEPOLE PINE**

**IDAHO**

| Land Ownership Class | Outbreak Area (Thousand acres) | Number of Trees (Thousand) | Mortality (Thousand cubic ft.) |
|---|---|---|---|
| National Forest | 593.8 | 477.0 | 5,987.9 |
| Other Federal | -- | -- | -- |
| State & Private | 70.4 | 177.5 | 3,907.4 |
| **TOTAL** | **664.2** | **654.5** | **9,895.3** |
| **Standard Error** | **--** | **±14.0%** | **±15.0%** |

**UTAH**

| Land Ownership Class | Outbreak Area (Thousand acres) | Number of Trees (Thousand) | Mortality (Thousand cubic ft.) |
|---|---|---|---|
| National Forest | 148.5 | 72.7 | 862.1 |
| Other Federal | 2.6 | 1.5 | 17.9 |
| State & Private | 3.1 | 1.6 | 18.0 |
| **TOTAL** | **154.2** | **75.8** | **898.0** |
| **Standard Error** | **--** | **±24.0%** | **±28.0%** |

**WYOMING**

| Land Ownership Class | Outbreak Area (Thousand acres) | Number of Trees (Thousand) | Mortality (Thousand cubic ft.) |
|---|---|---|---|
| National Forest | 34.9 | 10.7 | 148.2 |
| Other Federal | 2.2 | .7 | 9.5 |
| State & Private | .1 | .1 | .5 |
| **TOTAL** | **37.2** | **11.5** | **158.2** |
| **Standard Error** | **--** | **±36.0%** | **±41.0%** |

Table 5. Mountain pine beetle loss assessment survey--1981.

PONDEROSA PINE

UTAH

| Land Ownership Class | Outbreak Area (Thousand acres) | Number of Trees (Thousand) | Mortality (Thousand cubic ft.) |
|---|---|---|---|
| National Forest | 7.8 | 164.1 | 5,133.3 |
| Other Federal | .1 | 1.8 | 54.6 |
| State & Private | .4 | 8.7 | 273.0 |
| **TOTAL** | **8.3** | **174.6** | **5,460.9** |
| **Standard Error** | -- | **±4.0%** | **±7.0%** |

## SUMMARY

### Forest Insect and Disease Conditions
### Intermountain Region (R-4)[1]

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| Mountain pine beetle *Dendroctonus ponderosae* Hopk. | Lodgepole pine, ponderosa, and other pines | Idaho, Utah western *Wyoming* | Mountain pine beetle killed 1.14 million trees on 874,000 acres in 1981. For the first time in many years, mountain pine beetle epidemics showed a definite downward trend in southern Idaho. Infested acreage in Idaho decreased from 730,000 acres in 1980 to 650,000 acres in 1981. However, infestations in western Wyoming and Utah built up rapidly with subsequent heavy mortality. On the Ashley NF, mortality increased from 65,000 trees in 1980 to 350,000 trees in 1981. Generally the lodgepole pine on the north slope of the Uinta Mountains sustained heavy mortality from the beetle. |
| Jeffrey pine beetle *Dendroctonus jeffreyi* Hopk. | Jeffrey pine | Nevada | Increases in tree mortality were observed on the Carson and Bridgeport RD's, Toiyabe NF, around Markleeville, California, and on the east shore of Lake Tahoe. |
| Spruce beetle *Dendroctonus rufipennis* (Kby.) | Engelmann spruce | Utah | Increasing populations of spruce beetle on the Uinta NF occurred on 2,000 acres of over-mature spruce from Mill Hollow to Soapstone Basin. |
| Western balsam bark beetle *Dryocoetes confusus* Sw. | Subalpine fir | Idaho, Nevada, Utah, Wyoming | Fir mortality continued to increase with over 200,000 acres affected Regionwide in 1981. This mortality is caused by a complex of root rots and *Dryocoetes*. |

[1]Includes forests in southern Idaho, Nevada, Utah, and western Wyoming.

## SUMMARY

### Forest Insect and Disease Conditions
### Intermountain Region (R-4)

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| Douglas-fir beetle *Dendroctonus pseudotsugae* Hopk. | Douglas-fir | Idaho, Utah | Low levels throughout Region. |
| Pine engraver beetle *Ips pini* (Say) | Pines | Idaho Nevada, Utah | Low levels throughout Region. |
| Western Spruce Budworm *Choristoneura occidentalis* Free | True firs, Douglas-fir western larch, spruce | Idaho Utah, Wyoming | Over 1.4 million acres were defoliated Regionwide in 1981. The Boise, Caribou, Payette, and Sawtooth NF's all experienced increased defoliation. Defoliation was recorded for the first time near Logan, Utah, on the Wasatch-Cache NF. Infestations increased on the Fishlake and Dixie NF's. |
| Larch casebearer *Coleophora laricella* (Hbn.) | Western larch | Idaho | Widespread defoliation throughout the larch type on the Boise and Payette NF's. |
| Pine butterfly *Neophasia menapia* (Felder and Felder) | Ponderosa pine | Idaho | Light to moderate defoliation over a small area on the Boise NF. |
| Needle miner *Coleotechnites* sp. | Ponderosa pine | Idaho | Present over 1,900 acres on the Salmon NF. |
| Douglas-fir tussock moth *Orgyia pseudotsugata* (McD.) | Douglas fir, spruce | Idaho | Light to moderate defoliation occurred on approximately 160 acres in the Owyhee Mountains. |

## SUMMARY

### Forest Insect and Disease Conditions
### Intermountain Region (R-4)

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| Forest tent caterpillar *Malacosma disstria* Hbn. | Aspen | Idaho | Light to moderate defoliation occurred on approximately 35 acres along Cascade Reservoir. |
| **Stem and Branch Disease** | | | |
| Dwarf mistletoes *Arceuthobium* spp. | Douglas-fir, western larch, ponderosa pine, lodgepole pine | Idaho, Utah, Wyoming, Nevada | These pests continued to have significant impacts on growth and yield of the host species throughout the Region. |
| Atropellis canker *Atropellis piniphila* (Weir) Lohman and Cash | Lodgepole pine | Idaho | Three new infection areas were identified on the Boise and Payette NF's. Localized heavy infections. |
| Dasyscypha canker *Dasyscypha* sp. | Lodgepole pine | Idaho | Cankers caused top-kill on lodgepole pine seedlings in several plantations in southeastern Idaho. |
| Comandra rust *Cronartium comandrae* Peck | Lodgepole pine | Idaho, Wyoming. Utah | Cankers caused top-kill in lodgepole pine on the Targhee, Bridger-Teton, and Ashley NF's. |
| Cytospora canker *Cytospora chrysosperma* Pers. ex Fr. | Aspen, hybrid poplar | Idaho, Utah | Cankers were found killing young aspen in the Sawtooth NRA, Idaho, and hybrid poplar at Monroe Hot Springs, Utah. |
| **Root Disease** | | | |
| Annosus root rot *Fomes annosus* (Fr.) Cke. | Ponderosa pine, Douglas-fir, true fir | Idaho, Wyoming, Utah Nevada | Detections of annosus infections increased throughout the Region. |

## SUMMARY

**Forest Insect and Disease Conditions**
**Intermountain Region (R-4)**

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| Shoestring root rot *Armillaria mellea* (Vahl. ex Fr.) | Subalpine fir Engelmann spruce, ponderosa pine lodgepole pine | Utah, Wyoming | This fungus was found killing subalpine fir and Engelmann spruce on the Dixie NF, ponderosa pine on the Manti-LaSal NF, and lodgepole pine on the Bridger-Teton NF. |
| Red root butt rot *Polyporus tomentosus* Fr. | Douglas-fir | Idaho | Often isolated from decayed roots of beetle-killed Douglas-fir. |
| Red-brown butt rot, *Polyporus schweinitzii* Fr. | Douglas-fir | Idaho | Often isolated from decayed roots of beetle-killed Douglas-fir. |
| **Foliage Disease** | | | |
| Leaf spot of poplars *Marssonina populi* (Lib.) Magn. | Poplars | Idaho, Wyoming, Utah | Infection levels were locally heavy but varied from area to area and by clone. |
| Leaf rust *Melampsora* spp. | Poplars and conifers | Idaho | Spotty occurrence throughout southwestern Idaho. |
| Leaf spot *Septoria aceris* (Lib.) Berk. and Br. | Maple | Idaho | Heavily infected area on Payette NF. |
| Needle cast of pine *Elytroderma deformans* (Weir) Darker | Ponderosa pine, lodgepole pine | Idaho | Light-to-heavy infection levels were observed in west-central Idaho. |
| Red band needle disease, *Scirrhia pini* Funk & Parker | Ponderosa pine | Idaho | Identified on ponderosa pine in southwestern Idaho. This is the first report of the organism in the Intermountain Region. |

## SUMMARY

### Forest Insect and Disease Conditions
### Intermountain Region (R-4)

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| Meria needle disease *Meria laricis* Vuill. | Western larch | Idaho | Heavy infection levels occurred within the host range on the Payette and Boise NF's. Levels were up from last year. |
| Greybeard needle disease, *Lophodermium* spp. | Ponderosa pine, lodgepole pine | Idaho | Infections locally heavy in southwest Idaho. |
| Lodgepole needle disease, *Lophodermella concolor* (Dearn.) Darker | Lodgepole pine | Idaho | Scattered low-level infections in Idaho. |
| Pine needle rust *Coleosporium asterum* (Diet.) Syd. | Lodgepole pine | Idaho | Low levels scattered throughout type. |
| Christmas tree blight, *Rhabdocline pseudotsugae* Syd. | Douglas-fir | Idaho | Low levels throughout type. |
| Snow blight *Phacidium infestans* Karst. | Douglas-fir | Idaho | Infrequent in southeastern Idaho. |
| Needle cast *Lirula abietis-concoloris* (Mayr) Darker | Firs | Idaho, Utah | Local heavy occurrence in southwestern Idaho and Utah. |
| Needle rust *Pucciniastrum* spp. | Firs | Idaho | Local heavy occurrence in southwestern Idaho. |

## SUMMARY

### Forest Insect and Disease Conditions
### Intermountain Region (R-4)

| Insect or Disease | Host | Location | Remarks |
|---|---|---|---|
| **Abiotic** | | | |
| Late frost | Douglas-fir grand fir, subalpine fir, lodgepole pine | Idaho | Freezing temperatures on July 8, 1981, affected young succulent tissues. New leaders were drooped and misshapened. Branch tip mortality occurred, resembling symptoms of western spruce budworm damage. |